

## Cumulative Review 9

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

**Find the area of each triangle using the area formula or Herons formula. Show work!**

1.  $A = 52^\circ$ ,  $b = 14$  m,  $c = 21$  m

2.  $C = 112^\circ$ ,  $a = 1.8$  in,  $b = 5.1$  in

**Use the Law of Cosine and/or the Law of Sines to solve the triangle. Show work!**

3.  $A = 50^\circ$ ,  $B = 62^\circ$ ,  $a = 4$

4.  $B = 35^\circ$ ,  $a = 43$ ,  $c = 19$

**Convert each angle from degrees to radians. Show work!**

5.  $150^\circ$

6.  $75^\circ$

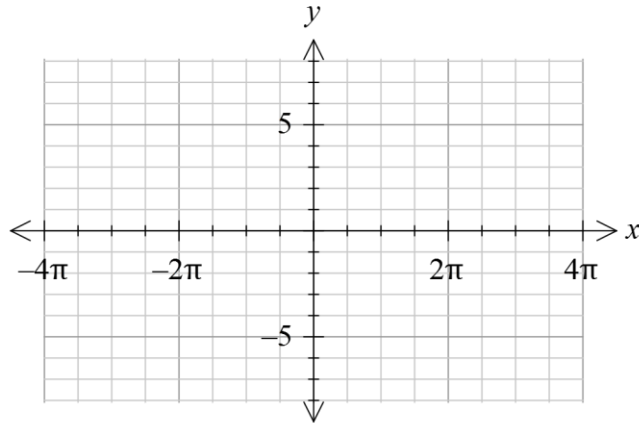
**Convert each angle from radians to degrees. Show work!**

7.  $\frac{\pi}{5}$

8.  $\frac{3\pi}{8}$

Graph one period of the given function. Identify the amplitude, period, phase shift, and vertical shift. Label the scale of the graphs.

9.  $f(x) = -3\cos\left(\frac{1}{2}x\right) - 1$



10. If  $f(x) = \cos^{-1} \theta$ , determine the value of  $f\left(-\frac{1}{2}\right)$ ,  $f\left(-\frac{\sqrt{3}}{2}\right)$ ,  $f\left(\frac{\sqrt{3}}{2}\right)$ , and  $f\left(\frac{1}{2}\right)$ .

11. Solve the equation.

$$-5 + 3\cos(x) + 8 = 0$$

12. Low tide is at 9:12 am and high tide is at 3:12 pm. The water level varies 48 inches between low and high tide. Write a cosine function to represent the change in water level where  $t$  is the number of hours since low tide and  $f$  is the height of the water.

a)  $f(t) = -24\cos\left(\frac{\pi}{6}t\right)$

b)  $f(t) = -24\cos\left(\frac{\pi}{3}t\right)$

c)  $f(t) = -48\cos\left(\frac{\pi}{6}t\right)$

d)  $f(t) = -48\cos\left(\frac{\pi}{3}t\right)$